AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of claims:**

1. (Original) A Fast Walsh Transform bias cancellation system, comprising:

a bias generator system having a plurality of inputs responsive only to feedback filter coefficients $f_1$, $f_3$, $f_5$ and $f_7$, said bias generator generating, based upon said feedback filter coefficients, a plurality of output signals corresponding to the bias from a Fast Walsh Transform system for cancelling said bias.

2. (Currently Amended) The Fast Walsh Transform bias cancellation system of claim 1, further including a feedback filter coefficient generator for generating said feedback filter coefficients.

3. (Original) The Fast Walsh Transform bias cancellation system of claim 1, in which the bias generator has a plurality of outputs each having a signal thereon, the bias generator output signals being defined by the equation:

$$B_k = (-f_1\Phi_2 + f_3\Phi_2^*)a_{0,\lfloor k/4 \rfloor}b^*_{\lfloor k/4 \rfloor,k} + (2f_3\Phi_2 + 2f_5\Phi_2^*)b^*_{\lfloor k/4 \rfloor,k} + (-f_5\Phi_2 + f_7\Phi_2^*)a^*_{0,\lfloor k/4 \rfloor}b^*_{\lfloor k/4 \rfloor,k}$$

4. (Original) A Fast Walsh Transform bias cancellation system, comprising:

a bias coefficient generator responsive to feedback filter coefficients and having a plurality of outputs, said bias coefficient generator configured to calculate bias generator inputs; and

a bias generator responsive to the bias coefficient generator outputs and having signals on its outputs corresponding to the bias from a Fast Walsh Transform system, said bias generator including:

a plurality of adders each having an input and an output coupled to one of the bias generator outputs; and

a plurality of complex multipliers each coupled between each adder input and each bias coefficient generator output.

5. (Original) The Fast Walsh Transform bias cancellation system of claim 4, in which the bias coefficient generator has three outputs each having a signal thereon, the generator output signals being defined by the respective equations:

$$D_0 = -f_1\Phi_2 + f_3\Phi_2^*$$

$$D_1 = 2f_3\Phi_2 + 2f_5\Phi_2^*$$

$$D_2 = -f_5\Phi_2 + f_7\Phi_2^*$$

6. (Original) The Fast Walsh Transform bias cancellation system of claim 5, in which the bias generator has sixteen outputs each having a signal thereon, the bias generator output signals being defined by the equation:

$$B_k = D_0 a_{0,\lfloor k/4 \rfloor} b^*_{\lfloor k/4 \rfloor,k} + D_1 b^*_{\lfloor k/4 \rfloor,k} + D_2 a^*_{0,\lfloor k/4 \rfloor} b^*_{\lfloor k/4 \rfloor,k}$$

7. (Original) The Fast Walsh Transform bias cancellation system of claim 4, in which the first set of complex multipliers includes three complex multipliers, the plurality of adders includes

eight adders, the second set of complex multipliers includes sixteen complex multipliers and the bias generator includes sixteen outputs.

8. (Original) The Fast Walsh Transform bias cancellation system of claim 4, in which the bias coefficient generator is responsive to the feedback filter coefficients consisting of $f_1$, $f_3$, $f_5$, and $f_7$.

9. (Original) The Fast Walsh Transform bias cancellation system of claim 4, in which the bias coefficient generator is further responsive to a Fast Walsh Transform parameter that indicates the quadriphase rotation.

10. (Original) The Fast Walsh Transform bias cancellation system of claim 9, further including the Fast Walsh Transform system.

11. (Original) A Fast Walsh Transform bias cancellation system, comprising:

a bias coefficient generator responsive to feedback filter coefficients, said bias coefficient generator having a plurality of outputs and configured to calculate bias generator inputs; and

a bias generator responsive to the bias coefficient generator outputs and having a plurality of outputs, the signals on said bias generator outputs corresponding to the bias from the Fast Walsh Transform system, said bias generator including:

a first set of complex multipliers, one coupled to each bias generator input and responsive thereto, each of said first set of complex multipliers having a complex output;

a plurality of adders each having an output and responsive to the complex outputs of the first set of complex multipliers; and

a second set of complex multipliers, one coupled to each adder output and responsive thereto, and having outputs for providing said bias generator outputs.

12. (Original) The Fast Walsh Transform bias cancellation system of claim 11, in which the bias coefficient generator has three outputs each having a signal thereon, the generator output signals being defined by the respective equations:

$$D_0 = -f_1\Phi_2 + f_3\Phi_2^*$$

$$D_1 = 2f_3\Phi_2 + 2f_5\Phi_2^*$$

$$D_2 = -f_5\Phi_2 + f_7\Phi_2^*.$$

13. (Original) The Fast Walsh Transform bias cancellation system of claim 12, in which the outputs of the bias generator has sixteen outputs each having a signal thereon, the bias generator output signals being defined by the equation:

$$B_k = D_0 a_{0,\lfloor k/4 \rfloor} b^*_{\lfloor k/4 \rfloor, k} + D_1 b^*_{\lfloor k/4 \rfloor, k} + D_2 a^*_{0,\lfloor k/4 \rfloor} b^*_{\lfloor k/4 \rfloor, k}.$$

14. (Original) The Fast Walsh Transform bias cancellation system of claim 11, in which the first set of complex multipliers includes three complex multipliers, the plurality of adders includes

eight adders, the second set of complex multipliers includes sixteen complex multipliers and the bias generator includes sixteen outputs.

15. (Original) The Fast Walsh Transform bias cancellation system of claim 11, in which the bias coefficient generator is responsive to the feedback filter coefficients consisting of $f_1$, $f_3$, $f_5$, and $f_7$.

16. (Original) The Fast Walsh Transform bias cancellation system of claim 11, in which the bias coefficient generator is further responsive to a Fast Walsh Transform parameter selected from the group of $\varnothing_2$ selected from the group of 1, -1, j and -j.

17. (Original) The Fast Walsh Transform bias cancellation system of claim 11, further including the Fast Walsh Transform system.

18. (Currently Amended) A Fast Walsh Transform bias cancellation system, comprising:

a Fast Walsh Transform system having a plurality of outputs;

means for generating the bias of the Fast Walsh Transform system;

means for cancelling the bias from said Fast Walsh Transform system responsive to said Fast Walsh Transform system outputs and said means for generating the bias of ~~a~~ the Fast Walsh Transform system.

19. (Original) A method for cancelling the bias from a Fast Walsh Transform system, the method comprising the steps of:

generating the bias from a Fast Walsh Transform system responsive only to feedback filter coefficients $f_1$, $f_3$, $f_5$ and $f_7$; and

cancelling the bias of said Fast Walsh Transform system using the generated bias of the Fast Walsh Transform system.